

Customer No.: 31561
Application No.: 10/710,405
Docket No.: 13302-US-PA

REMARKS

Present Status of the Application

Claims 34-35 are objected to because "mask" should be amended into "hardmask". The Office Action rejected claims 1-5, 7 under 35 U.S.C. 102(e), as being anticipated by Barth et al. (US 6,737,747). The Office Action rejected claims 27-30 and 32 under 35 U.S.C. 103(a), as being unpatentable over Barth et al. (US 6,737,747). The Office Action also rejected claims 6 and 31 under 35 U.S.C. 103(a) as being unpatentable over Barth in view of Edelstein (US 2005/0194619). The Office Action rejected claims 1, 4, 5, 7-8 under 35 U.S.C. 102(e), as being anticipated by Dalton et al. (US 6,734,096). The Office Action rejected claims 27, 29, 30, 32 and 33 under 35 U.S.C. 103(a), as being unpatentable over Dalton et al. (US 6,734,096). The Office Action also rejected claims 6 and 31 under 35 U.S.C. 103(a) as being unpatentable over Dalton in view of Edelstein. In particular, the office action stated claim 35 is allowable if rewritten in dependent form including all of the limitations of the bas claim and any intervening claims.

Applicants have amended claims 34-35 to overcome the objection. After entry of the foregoing amendments, claims 1, 3-8 and 27-35 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Rejection under 35 U.S.C 102 (e)

The Office Action rejected claims 1-5 and 7 under 35 U.S.C. 102(e), as being anticipated by Barth et al. (US 6,737,747). The Office Action rejected claims 1, 4, 5 and 7 under

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35 U.S.C. 102(e), as being anticipated by Dalton et al. (US 6,734,096). Applicant respectfully traverses the rejections for at least the reasons set forth below.

In order to properly anticipate Applicants' claimed invention under 35 U.S.C 102, each and every element of claim in issue must be found, "either expressly or inherently described, in a single prior art reference". "The identical invention must be shown in as complete details as is contained in the claim. Richardson v. Suzuki Motor Co., 868 F. 2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See M.P.E.P. 2131, 8th ed., 2001.

The office action stated because claim 1 recites on a edge and not only on the edge, the broadest reasonable interpretation of the limitation is the step of planarizing an entire layer will polishing on the edge of one of the recited layers. However, applicant respectfully submits claim 1 recites "wherein *residuals are formed on an edge* of at least one of the substrate, the dielectric layer, the hydrophilic material layer and a combination thereof" and "performing a polish process on the edge of at least one of the substrate, the dielectric layer, the hydrophilic material layer and a combination thereof *to remove the residues*" means the polish process is used to remove the residues formed on the edge of at least one of the substrate, the dielectric layer, the hydrophilic material layer and a combination thereof, but not to polishing or remove the recited layers.

Barth discloses excess liner 114 and conductive material 115 may be removed in a CMP process, in which the top surface of conductor 115 is made coplanar with the hardmask layer 113. Hardmask layer 113 may serve as a polish-stop layer during this CMP step, thereby protecting ILD layer 112 from damage during polishing. Usually, the CMP process is a fully planarization

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process and thus the top surface of conductor 115 is made coplanar with the hardmask layer 113 (see col. 9, lines 34-40). However, Barth does not teach or suggest performing a polish process to remove *the residues* formed on the edge of the layers. Therefore, Barth does not teach each and every element in claim 1.

In addition, Dalton teaches a method for forming a metal pattern in a dielectric layer. In particular, a CMP process is also conducted to remove the excess metal (see Fig. 2F-2G and col. 4, lines 40-50). Similarly, the CMP process disclosed by Dalton is performed on the top surface of the metal layer. The citation fails to teach or suggest a polish process is performed only on the edge of the resulted structure to remove *the residues* formed on the edge of the layers. Therefore, Dalton does not teach each and every element in claim 1.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 1 patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 3-5 and 7 patently define over the prior art as a matter of law.

Rejection under 35 U.S.C 103 (a)

Applicants respectfully traverse the rejection of claims 27-30 and 32 under 35 U.S.C. 103(a), as being unpatentable over Barth et al. (US 6,737,747) and the rejection of claims 27, 29, 30, 32 and 33 under 35 U.S.C. 103(a), as being unpatentable over Dalton et al. (US 6,734,096) because a prima facie case of obviousness has not been established by the Office Action.

To establish a prima facie case of obviousness under 35 U.S.C. 103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or

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suggest each and every element in the claims. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must "be found in the prior art, and not be based on applicant's disclosure." See M.P.E.P. 2143, 8th ed., February 2003.

As discussed above, both Barth and Dalton teaches performing the CMP process on the entire surface of the layer(s) to remove the layer(s), but they do not teach or suggest that the polish process is performed *to remove the residues* formed on the edge of at least one of the substrate, the dielectric layer, the hydrophilic material layer and a combination thereof. Therefore, the references, taken alone or combined, do not teach or suggest each and every element in claim 27. For at least the foregoing reasons, Applicants respectfully submit that independent claim 27 patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 27-30 and 32-33 patently define over the prior art as a matter of law.

Applicants respectfully traverse the rejection of claims 6 and 31 under 103(a) as being unpatentable over Barth in view of Edelstein (US 2005/0194619) and the rejections of claims 6 and 31 under 35 U.S.C. 103(a) as being unpatentable over Dalton in view of Edelstein because a prima facie case of obviousness has not been established by the Office Action.

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Applicant submits that, as disclosed above, Barth and Dalton fails to teach or suggest each and every element of claims 1 and 27 from which claims 6 and 31 depends. Edelstein also fails to teach or suggest the step of performing a polish process on the edge of at least one of the substrate, the dielectric layer, the hydrophilic material layer or a combination thereof *to remove the residues*. Edelstein cannot cure the deficiencies of Barth and Dalton. Therefore, independent claims 1 and 27 are patentable over Barth/Dalton and Edelstein. For at the least the same reasons, their dependent claims 6 and 31 are also patentable as a matter of law.

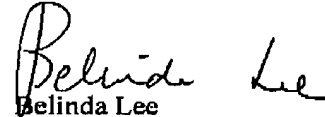
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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,


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